

# Vturn-40/45/46

Heavy duty turning center



# Vturn-40 & Vturn-45 Turning center

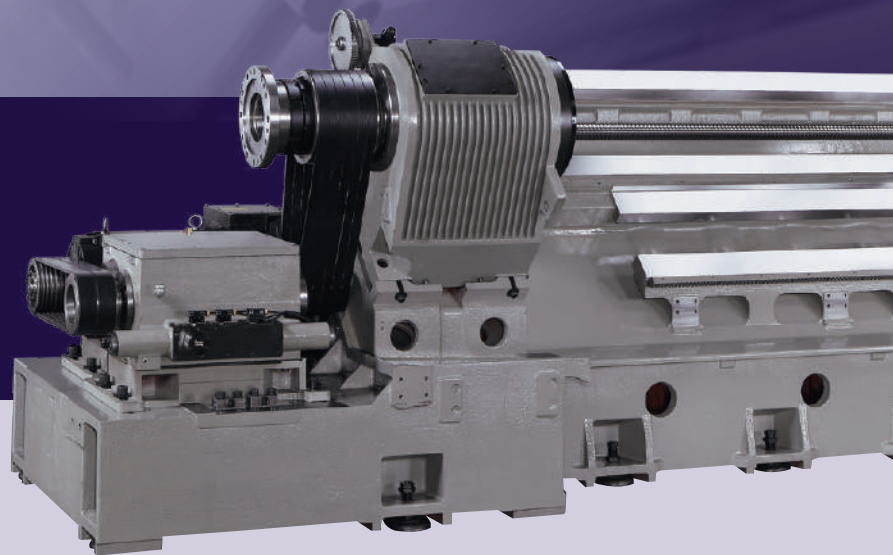
Heavy cutting lathe with spindle nose A2-11 for turning length from 1250mm to 4250mm

- Spindle bore A2-11 with hydraulic 15" chuck
- One piece 45 slant bed
- Large swing diameter 780 mm
- Turning length 1250 / 2200 / 3250 / 4250 mm
- 2-step gearbox included
- C-axis and Y-axis available
- Available with Large Spindle Bore (LSB)  
160 mm / 205 mm (XSB)

Model	Chuck / spindle speed	Spindle bore	Bar capacity (Hole dia. thru. draw bar)
Vturn-40	15" / 2500 rpm	105 mm	91 mm
Vturn-45	15" / 2000 rpm	135 mm	117.5 mm
Vturn-45LSB	18" / 1500 rpm	160 mm	145 mm
Vturn-45XSB (A2-15)	21" / 1200 rpm 24" / 1200 rpm	205 mm	180 mm 190 mm

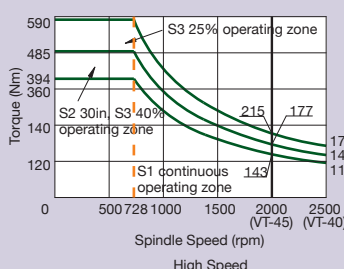
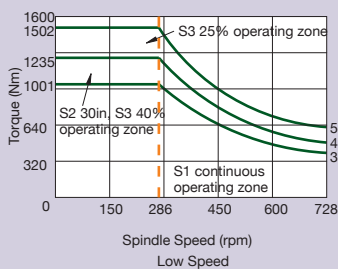
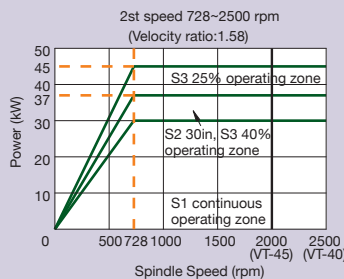
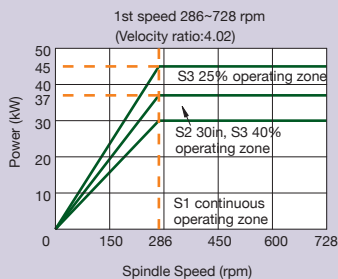


2-step gearbox



## Spindle Torque Output Diagram

- Vturn-40(45) STD



FANUC motor α 30i

## Boxways 85/100 mm (X/Z)

- Victor Taichung's own casting
- Hardness HRC 55 ± 3



Certificated Casting

**GB300**



## Victor's own Turret

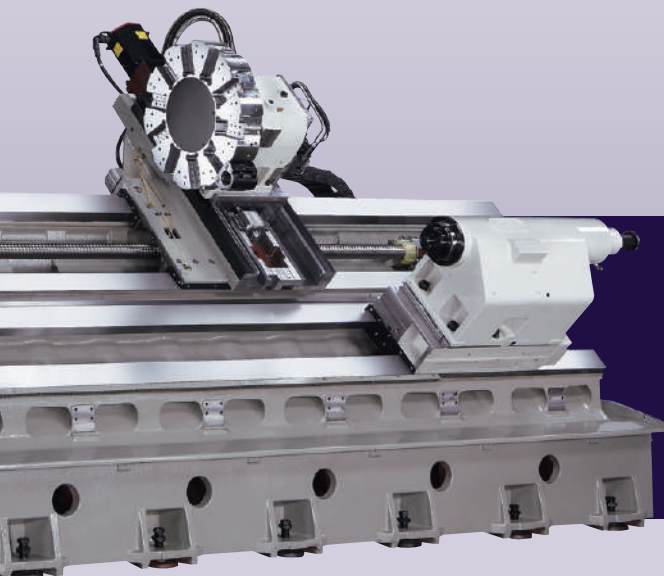
- Wide span turret carriage upgrades structure stiffness.
- Milling turret (servo driven) available with VDI 50 interface for quick tool change or BMT 75 interface for high rigidity



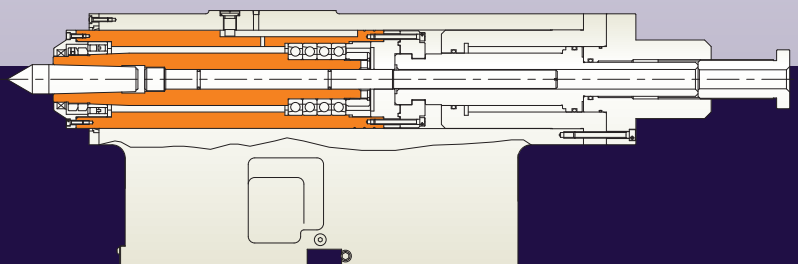
Vturn-40/220

## Tailstock MT5

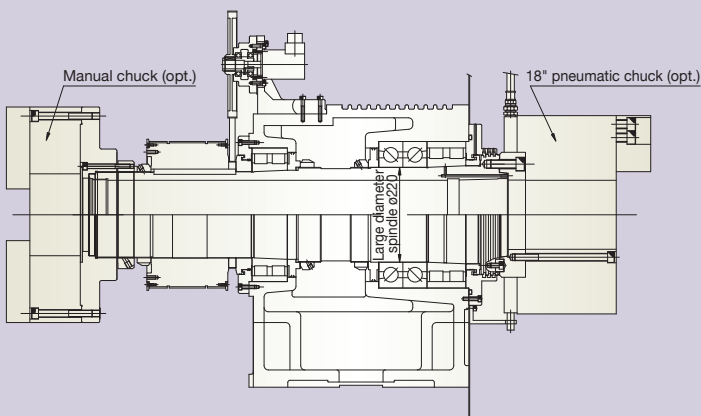
- Twin cylinder clamping
- Built in bearings for fixed center
- Tow along by turret
- Programmable by M code.



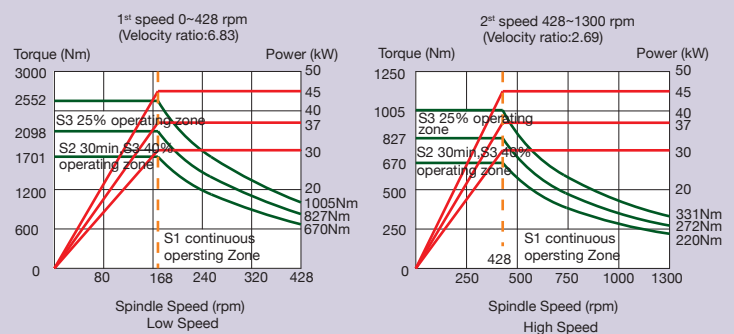
Vturn-40/325



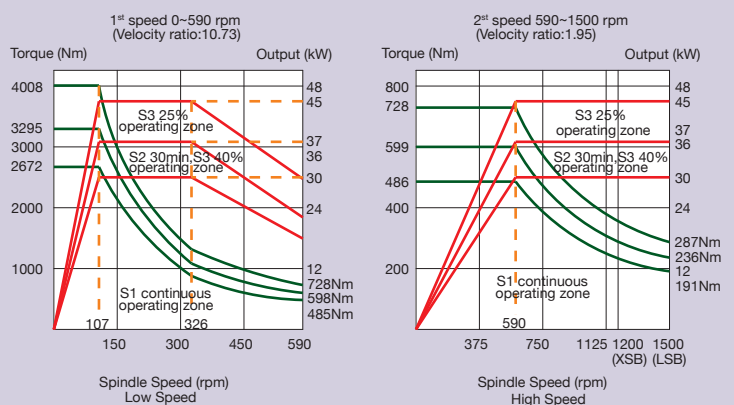
## Large Spindle Bore (LSB, optional)



- Vturn-45LSB (with Victor gearbox)



- Vturn-45XSB (with GTP gearbox) (opt. for Vturn-45LSB)



# Vturn-40/45 Turning center C axis & Y Axis Application

- 2 step gearbox upgrade (by GTP)
- Victor's own servo turret for quick indexing:  
1.0 sec (adj.), 1.2 sec. (opposite)
- Milling turret with VDI-50 disk or BMT-75 disk (12 station live tools)
- Milling power 7kW / 3000rpm



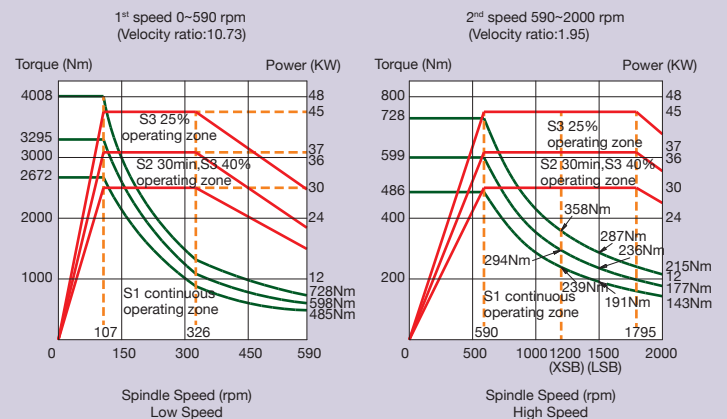
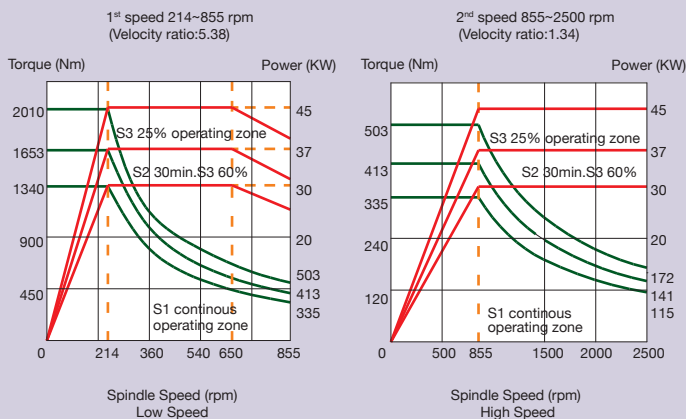
Vturn-45/125



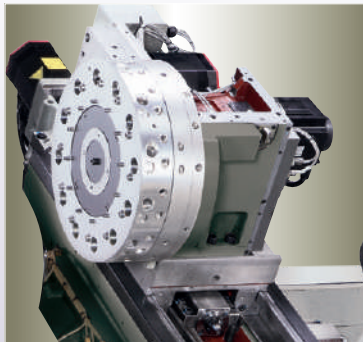
## Spindle Output

- Vturn-40 CV/CM/YCM (with GTP gearbox)

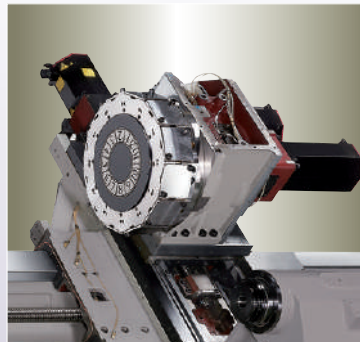
- Vturn-45 (LSB, XSB) CV/CM/YCM (with GTP gearbox)



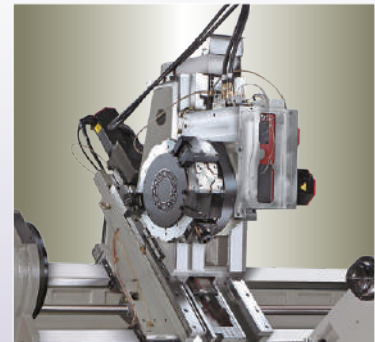
# Servo Milling Turret



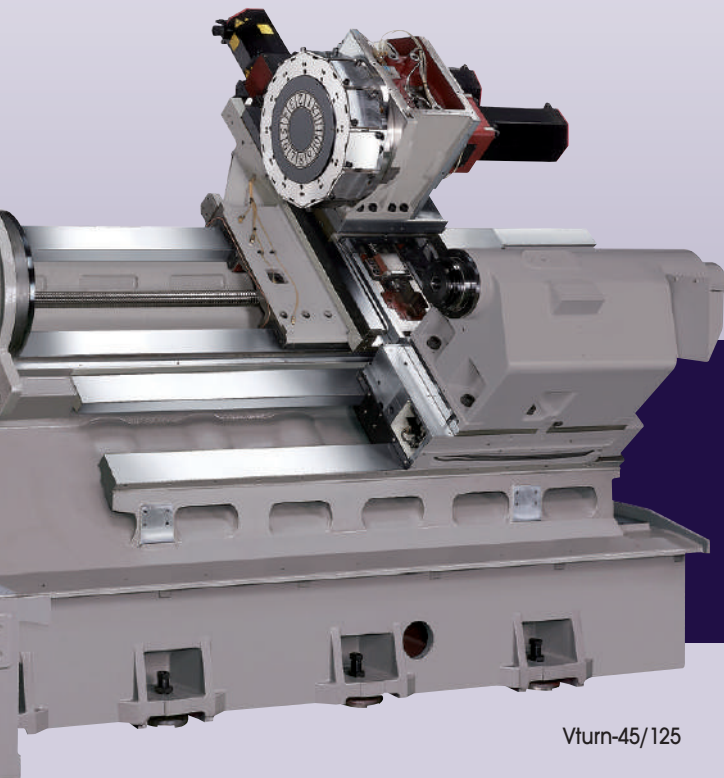
C axis VDI 50 turret (CV)



C axis BMT 75 turret (CM)

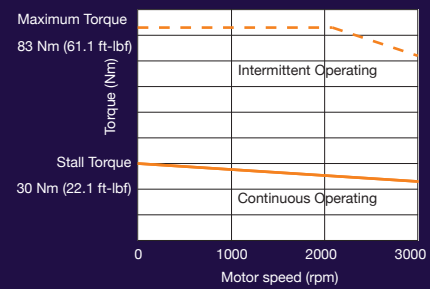


C&Y axis BMT 75 turret (YCM)



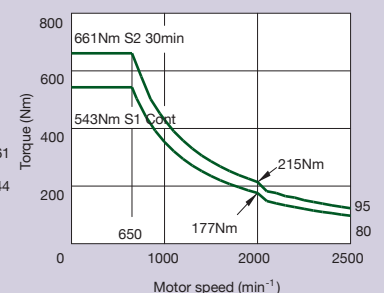
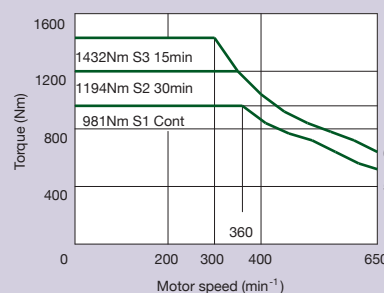
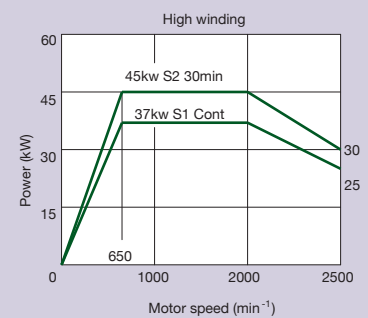
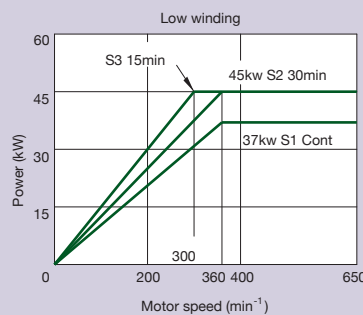
Vturn-45/125

## Milling Motor Output



### Opt. Built in Spindle 45kW (30 min.)

- Bar capacity 106 mm (spindle bore: 116mm)
- Spindle speed 2500 rpm
- Spindle output 1432 Nm (S3 15 min.)
- Good for contour milling

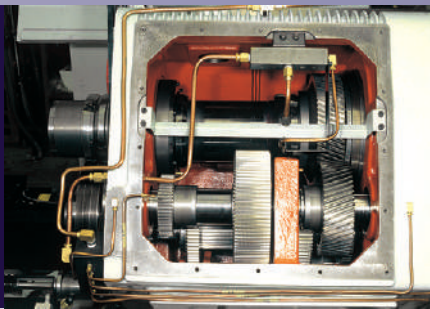


250M (built-in spindle)

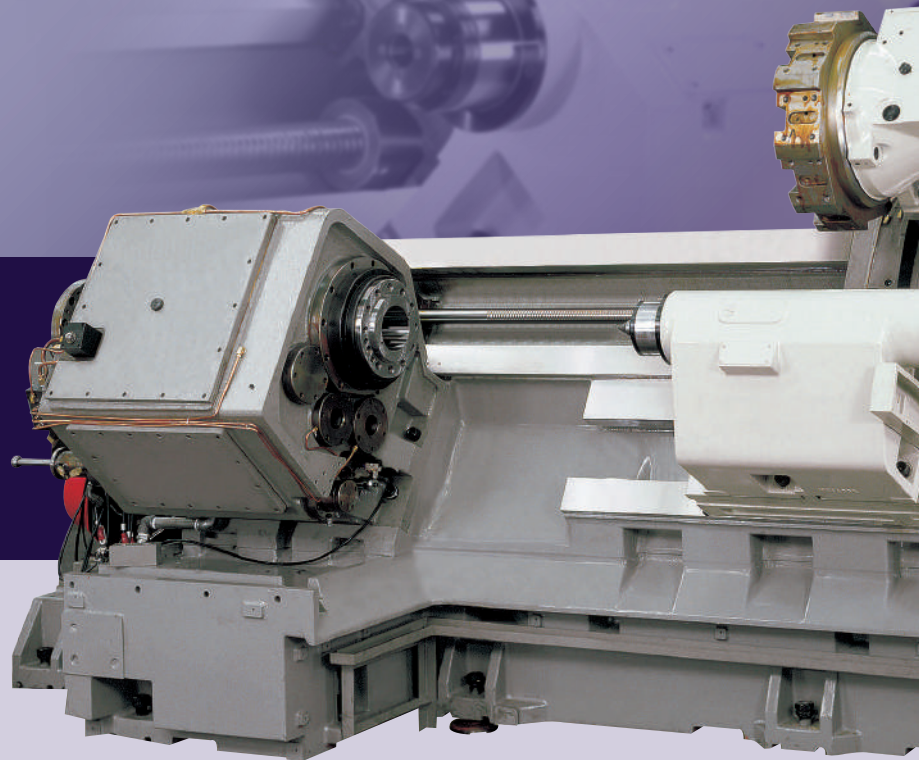
# Vturn-46 Turning center

## Built-in 4-Step Gearbox for powerful heavy cutting!

- Genuine 60° slant bed for minimum distance from Z-axis ball screw to the tool tip so as to reduce the chip built-up.
- Built-in 4-step gearbox inside the headstock further enhances the cutting torque 536.4kg-m at low spindle speed 67rpm.
- Spindle nose A2-11 with hydraulic 15" chuck is offered as standard and available with 18"/21"/24" chucks.
- Z-axis ballscrew diameter 50mm.
- Maximum turning length 1650mm.
- Available with C-axis spindle and live tooling by Victor's own VDI turret.

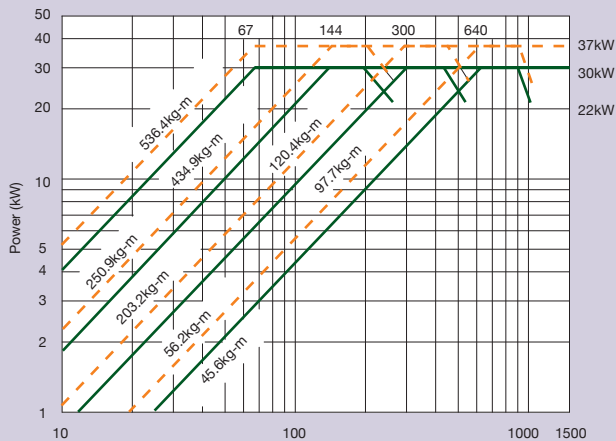


4-step gearbox



## Spindle Torque Output Diagram

1<sup>st</sup> speed 67 - 260 rpm  
 2<sup>nd</sup> speed 144 - 560 rpm  
 3<sup>rd</sup> speed 300 - 1170 rpm  
 4<sup>th</sup> speed 640 - 1500 rpm

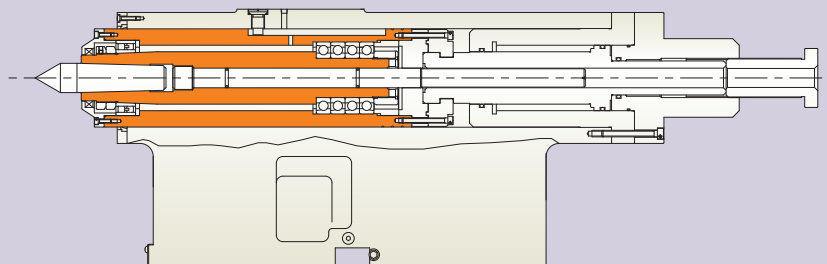
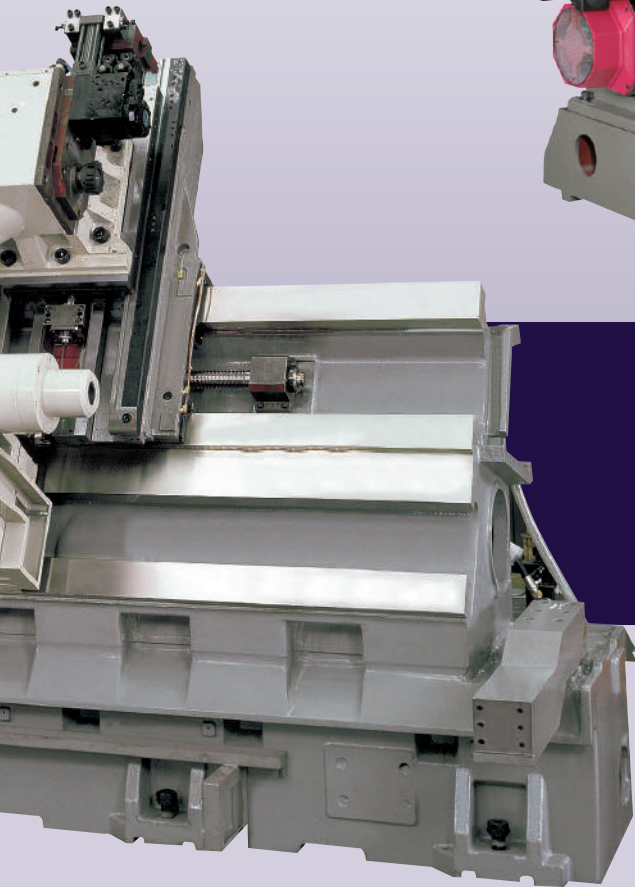
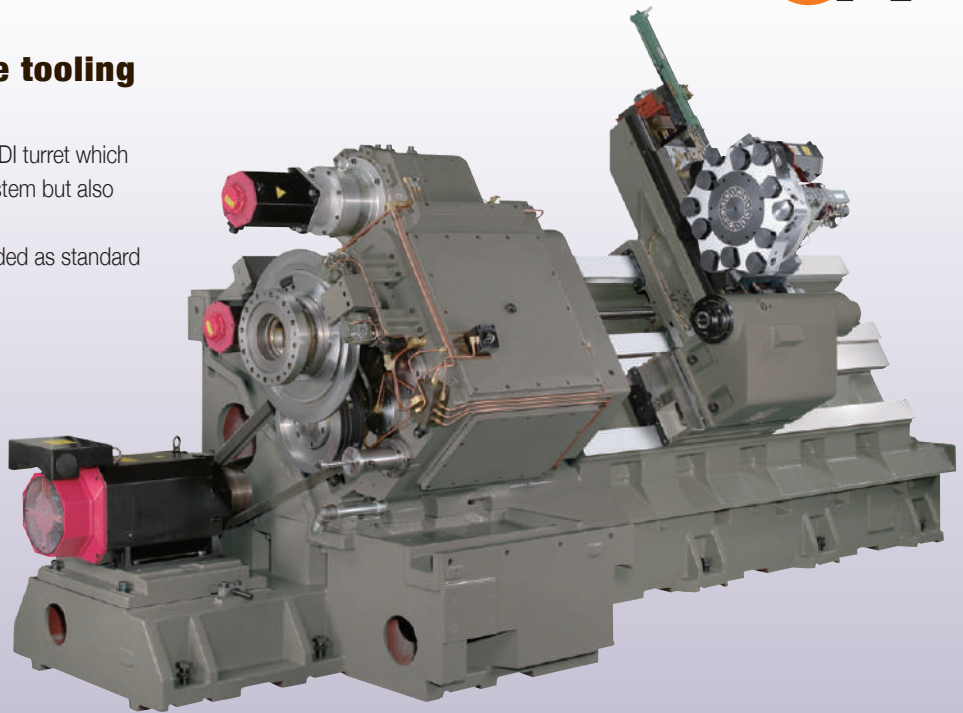


Spindle Speed (rpm)      37kW: 30 min rating  
 FANUC motor α 30i      30kW: Continuous rating



## C-axis VDI turret with live tooling (CV option.)

- Live tooling is provided through the use of VDI turret which not only provides an international tooling system but also allows for quick and simple tool mounting.
- Cf-axis design with angular encoder is included as standard to assure high indexing accuracy.
- Coupling specification DIN-5480.
- Milling power 7kW/3000rpm.



## Powerful tailstock

- Built-in bearings for fixed center.
- MT#5 tailstock for powerful engagement.

## Vturn-46CV cutting capability on mild steel S45C

	OD turning	Drilling (Z-axis $\alpha 30^\circ$ )	Milling	Tapping
Metal removal rate (spindle loading %)	792cc/min (93%)	672cc/min	30cc/min (99%)	-
Tool	$\varnothing 32 \times 10$ mm	$\varnothing 58 \times 35$ mm	$\varnothing 25 \times 15$ mm	M16xP2 (80%)
Spindle speed	686rpm	848rpm	600rpm	300rpm
Feed	F0.35mm/rev	F0.3mm/rev	F80mm/min	F600mm/min

# Standard and Options

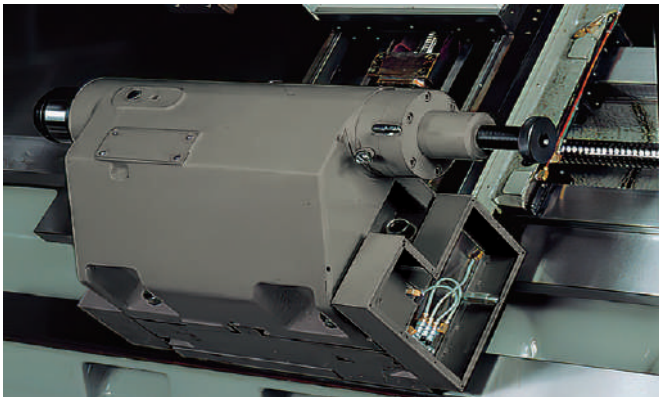
- Fanuc Oi TF Plus (type 1) control with 10.4" screen
- 15" 3 jaw power chuck
- Programmable tailstock (MT 5)
- Moving CRT (for VT 40/220, 325, 425)
- Coolant flush onto Z axis covers (except Vturn 46)
- Built in LED light
- Chip conveyor
- Air conditioner for electrical cabinet



\* Vturn-40/220



\* Vturn-40/220Y



## Programmable tailstock

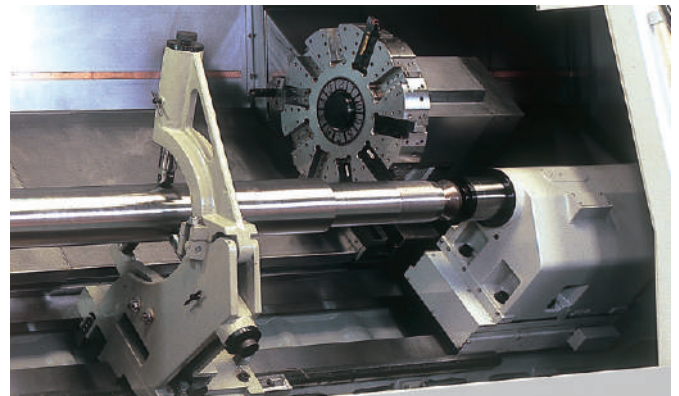
- Mounted on slideways for maximum clamping stability.
- Hydraulic clamping to bed with variable hydraulic pressure to tailstock quill.
- Programmable tailstock (std.)



## Oil skimmer (opt. for VT-46)

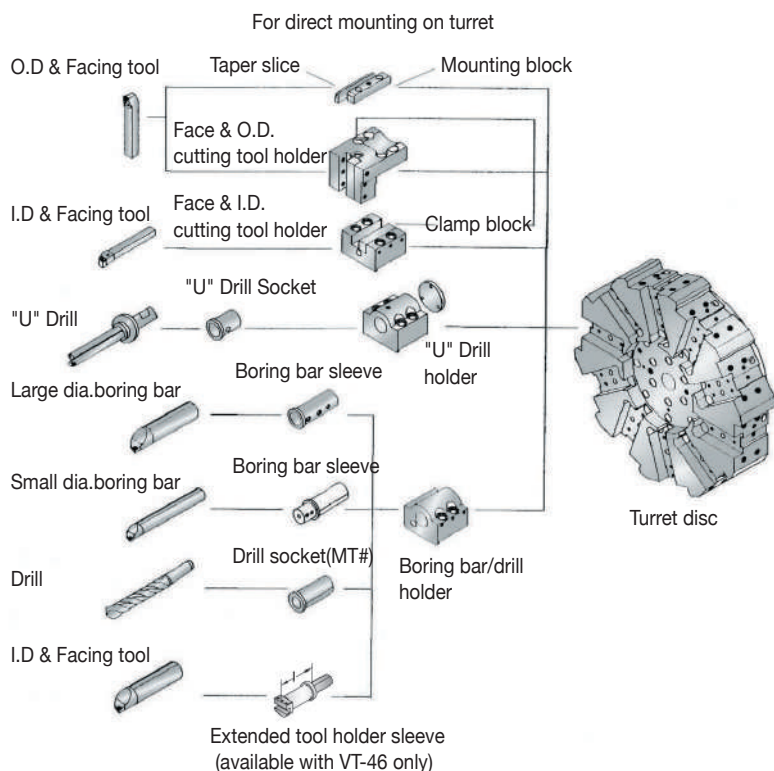


- Coolant flush (std.)



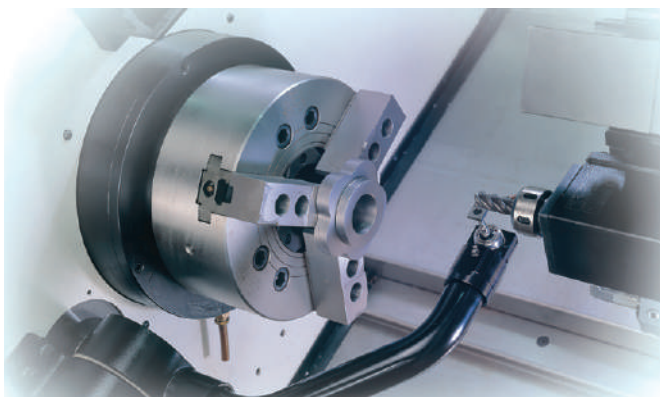
- Manual steady rest (std. for Vturn-40(45)/220, 325, 425)
- Clamping range: 280-400mm (or 150-300mm)

# Tooling accessories (excl. VDI or BMT turret model)



TOOL \ MODEL	Vturn-40 Vturn-45	Vturn-46
<b>Tool shank for turret disk</b>	32 mm	32 mm
<b>Maximum boring bar dia.</b>	50 mm	60 mm
<b>Face + O.D. cutting tool holder</b>	1	1
<b>Face + I.D. cutting tool holder</b>	1	1
<b>Extended I.D. cutting tool holder</b>	-	2
<b>Boring bar holder</b>		
32 mm	-	-
40 mm	-	-
50 mm	5	-
60 mm	-	5
<b>Boring bar sleeve</b>		
8 mm	-	-
10 mm	1	-
12 mm	1	-
16 mm	2	-
20 mm	2	2
25 mm	2	2
32 mm	2	2
40 mm	2	2
50 mm	-	2
<b>Drill socket</b>		
MT1	-	-
MT2	-	-
MT3	Opt.	-
MT4	1	1
<b>U drill holder</b>		
32 mm	-	-
40 mm	-	-
<b>U drill socket</b>		
20 mm	-	-
25 mm	1	-
32 mm	1	2
40 mm	Opt.	2

※ Tooling accessories are subject to change without notice.



● Tool presetter (opt.)



● Hydraulic steady rest (opt.)

## Machine Color Option (RAL-7024)



# Machine Specifications

ITEM \ MODEL	Vturn-40/125(CM)(Y) Vturn-40/220(CM)(Y) Vturn-40/325(CM)(Y) Vturn-40/425(CM)(Y)	Vturn-45/125(CM)(Y) Vturn-45/220(CM)(Y) Vturn-45/325(CM)(Y) Vturn-45/425(CM)(Y)	Vturn-46/165(CV)
<b>MACHINE CAPACITY</b>			
Swing over bed	mm	780	820
Std. Turning dia.	mm	520 (492) [432]	520 (468 for CV)
Max. turning dia.	mm	620 [580] [520] (470 for CV)	730 (528 for CV)
Swing over carriage	mm	620	520
Center distance	mm	1325 2275 3235 4305	1750
Hole through draw bar	mm	91 (opt. 106 for built-in spindle)	115
<b>AXIS FEEDS</b>			
X axis travel :			
- Std turret	mm	310 + 30	365 + 25
- VD I turret		215 + 125	137 + 303
- VDI turret, C-axis		325 + 15	186 + 234
- BMT turret, C-axis		290 + 50 [260 + 140]	-
Z axis travel	mm	1250 2200 3250 4250	1650
Y axis travel	mm	± 80	-
Rapid feed – X/Z axis	m/min	24 / 24 20 / 20 20 / 12 20 / 8	12 / 15
Rapid feed – Y axis	m/min	7	-
Feed motor – X/Z axis	kW	4 / 4 [7 / 7 (α 30i)] 4 / 7 (α 30i_30Nm) [7 / 6 (α 40i)] 4 / 6 (α 40i_38Nm) [7 / 6 (α 40i)] 4 / 6 (α 40i_38Nm) [7 / 6 (α 40i)]	3 / 4 (opt. 3 / 7)
Feed motor – Y axis	kW	4	-
JOG feed rate	mm/min	0~1260	0~1260
Ball screw dia x pitch – X/Z axis	mm	36 x P8 (X), 50 x P10 (Z) 36 x P8 (X), 50 x P16 (Z) 36 x P8 (X), 63 x P16 (Z) 36 x P8 (X), 70 x P12 (Z)	36 x P6 (X) 50 x P10 (Z)
Ball screw dia x pitch – Y axis	mm	32 x P8 (Y)	-
<b>SPINDLE</b>			
Spindle nose (chuck)	inch	A2-11 (15")	A2-11 (15")
Max. spindle speed	rpm	2500	2000 (1500 for LSB, 1200 for XSB)
Spindle motor power (cont./30min/15min)	kW	30 / 37 / 45 with gearbox	30 / 37 / 45 with gearbox
Bearing inside dia.	mm	160	190 (220 for LSB, 260 for XSB)
Spindle bore	mm	105	135 (160 for LSB, 205 for XSB)
<b>TURRET</b>			
No. of tools	no.	10 (opt. 12) (12 for CV/YCM/CM)	10 (12 for CV)
No. of live tools	no.	12	6 (CV)
Tool shank size	mm	32	32
Coupling dia.	mm	320 (320) [260] (260 for CV)	320 (200)
Max. boring bar dia.	mm	50 (VDI-50) [BMT-75]	60 (VDI-50)
Exchange time (T-T)	sec	1	1
Milling speed	rpm	3000	3000
Milling motor	kW	7.0	7.0
<b>TAILSTOCK</b>			
Quill dia.	mm	150	150
Quill stroke	mm	150	150
Quill taper		MT#5 (live)	MT#5 (live)
<b>OTHER</b>			
CNC controller (FANUC)		0i-TF Plus (10.4")	0i-TF Plus (10.4")
Power requirement	KVA	50 (52 for CV/CM, 64 for YCM)	46 (49 for CV)
Tank capacity	L.	600 700 850 950	250
Approx. machine size	m	5.3 x 2.7 x 2.2 [2.9] 7.1 x 2.7 x 2.2 [2.9] 8.5 x 2.7 x 2.2 [2.9] 9.5 x 2.7 x 2.2 [2.9]	6.2 x 3 x 2.5
Net weight (incl. standard accessories)	kg	12700 (13000) [13300] 15500 (15600) [15800] 17000 (19300) [19500] 22000 (22300) [22500]	12800 (13100)

※Machine and controller specifications are subject to change without notice.

# VICTOR Taichung's FANUC Oi-TF Plus 10.4" Control (Type I) Specifications



## Standard

ITEM\SPECIFICATION	DESCRIPTION
<b>Controlled Axes:</b>	
1. Controlled axes	2 Axes (X, Z)
2. Simultaneous controlled axes	2 Axes
3. Least input increment	0.001mm
4. Least command increment	0.0005mm (X) / 0.001mm (Z)
5. Command system	Incremental / Absolute
6. HRV Control	HRV3+
7. Unexpected disturbance torque detection (AIR-BAG)	Std.
8. Backlash compensation	Std.
9. Stored pitch error compensation	Std.
<b>Operation &amp; Program Input:</b>	
1. Input / Output interface	RS-232, PCMCIA Card, USB
2. Tool offset	99 sets
3. Sequence number	N5-Digit
4. Program number	O8-Digit
5. Program name	31-characters
6. M code function	M3-digit
7. S code function	S4-digit
8. T code function	T4-digit
9. Positioning	G00
10. Linear interpolation	G01
11. Circular interpolation	G02, G03
12. Programmable data input	G10
13. Plane selection	G17~G19
14. Inch / Metric conversion	G20 / G21
15. Reference position return	G28, G30
16. Thread cutting	G32, G34
17. Threading retract	Std.
18. Tool nose radius compensation	G40~G42
19. Work piece coordinate system	G52~G59
20. Macro, Sub program call	G65, M98, M99 (10 folds nested)
21. Multiple repetitive cycle I & II	G70~G76
22. Canned cycle for drilling	G80~G89
23. Canned cycles	G90, G92, G94
24. Program stop / end	M00~M02 / M30
25. Rigid tapping (Spindle)	M29
26. Manual Guide i	Std.
27. Optional blocks skip 2-9	Std.

## Standard Accessories

- Power chuck with soft jaws
- Programmable tailstock
- Chip conveyor with cart
- Automatic forced lubrication
- Fully enclosed splash guarding
- Tool holders (excl. VDI / BMT turret system)
- Fanuc Oi-TF Plus (10.4") control
- 3 step warning light
- Air conditioner for electrical cabinet
- Fanuc e-books (CD)

## Feed Function:

1. Manual handle feed rate	X1, X10, X100
2. Rapid traverse rate	F0, 25%, 50%, 100%
3. Cutting feed rate	0~150%
4. Spindle override	50~120%
5. Feed per Minute / Revolution	G98 / G99

## Edit Operation:

1. Part Program Storage Length (in total)	5120m (2MB)
2. Number of Registerable programs (in total)	1000
3. Part Program Editing	Std.
4. Memory card program entry count extension (Max. 1000)	Std.

## C Axis Function:

1. Polar coordinate interpolation	Std. (G112/G113)
2. Cylindrical interpolation	Std. (G107)
3. CS contouring control	Std.
4. Coordinate System Rotation	Std.

## OPTIONS

### With hardware included

1. Tool life management	<input type="checkbox"/>
2. Program restart	<input type="checkbox"/>
3. Data server (with PCB and CF card 1GB)	<input type="checkbox"/>
4. Ethernet/IP (to be linked to robot)	<input type="checkbox"/>
5. PROFIBUS-DP (to be linked to robot)	<input type="checkbox"/>
6. CC-Link (to be linked to robot)	<input type="checkbox"/>
7. Fast Ethernet (required for SCADA Web with additional RJ45 port)	<input type="checkbox"/>

### Without hardware included

8. Circular thread cutting (G35, G36)	<input type="checkbox"/>
9. AICC-1 (G5.1 Q1, 40 blocks)	<input type="checkbox"/>
10. AICC-2 (G5.1 Q1, 200 blocks)	<input type="checkbox"/>
11. Helical interpolation (C-axis only)	<input type="checkbox"/>
12. Arbitrary speed threading	<input type="checkbox"/>

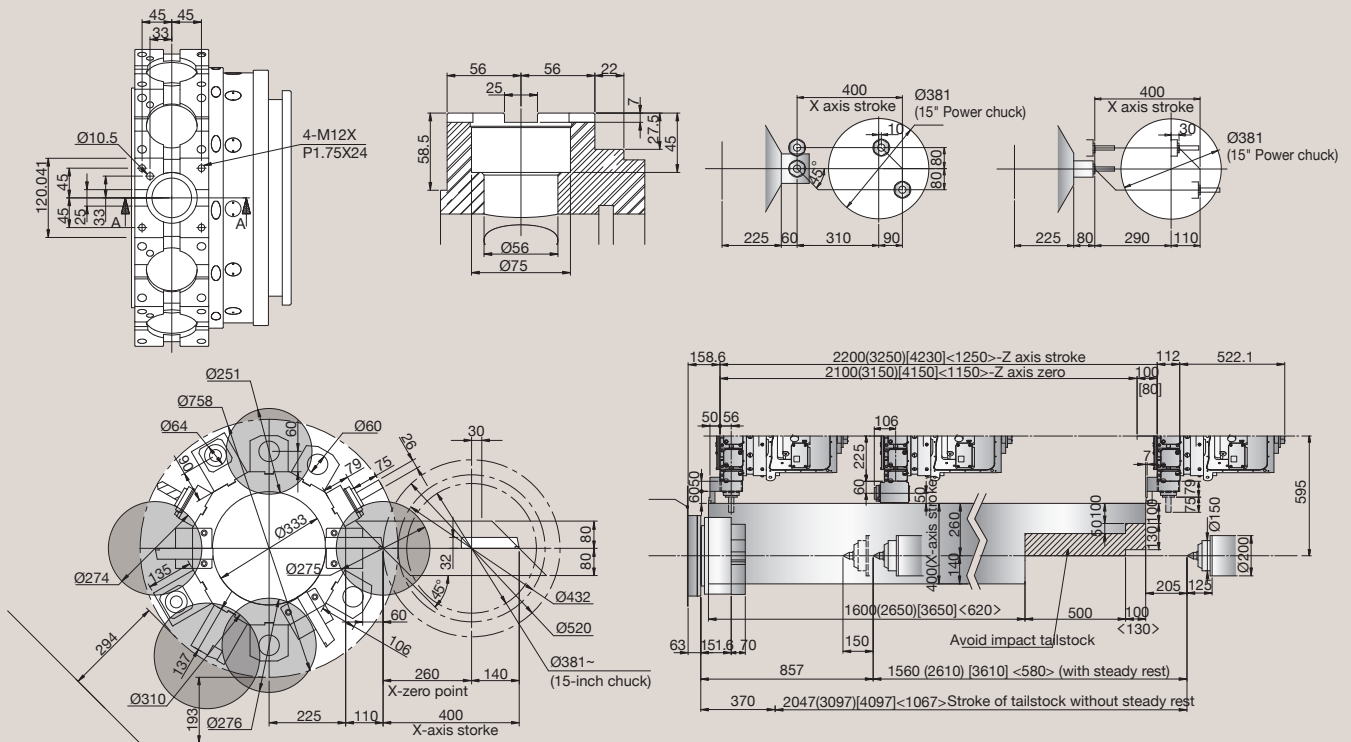
## Optional Accessories

- Kitagawa® chuck
- Hard jaws
- Tailstock center
- Manual tool presenter
- Automatic tool presenter
- High pressure coolants
- Auto door
- Air blow system
- Oil-mist remover
- Oil skimmer (std. on Vturn-40,45)
- Steady rest (Manual or hydraulic)
- C-axis with live tooling
- High/low chucking pressure
- Fanuc manuals



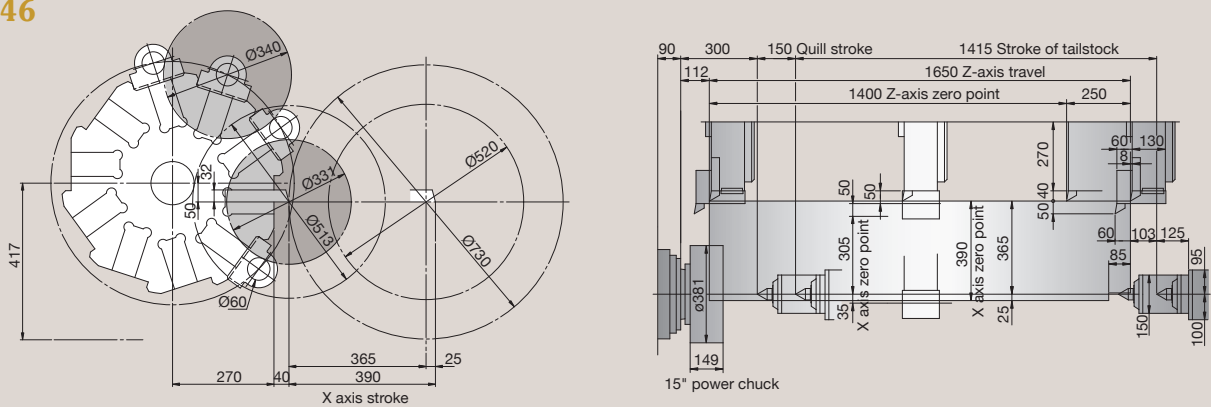
# Technical Drawings

## Vturn-40YCM (Vturn-45YCM)

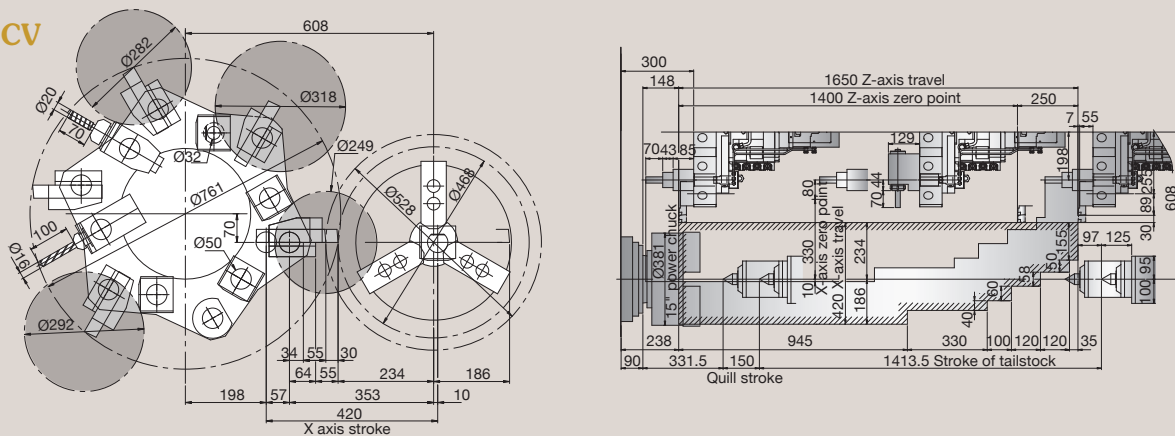


Vturn-40/220 (Vturn-40/325) [Vturn-40/425] <Vturn-40/125>

## Vturn-46

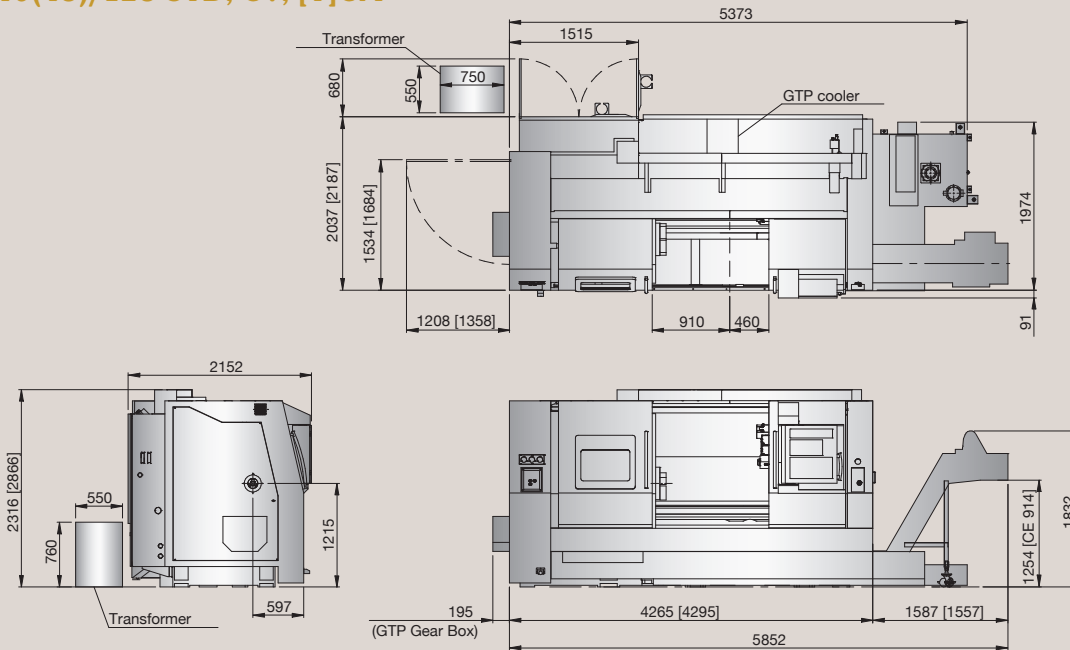


## Vturn-46CV

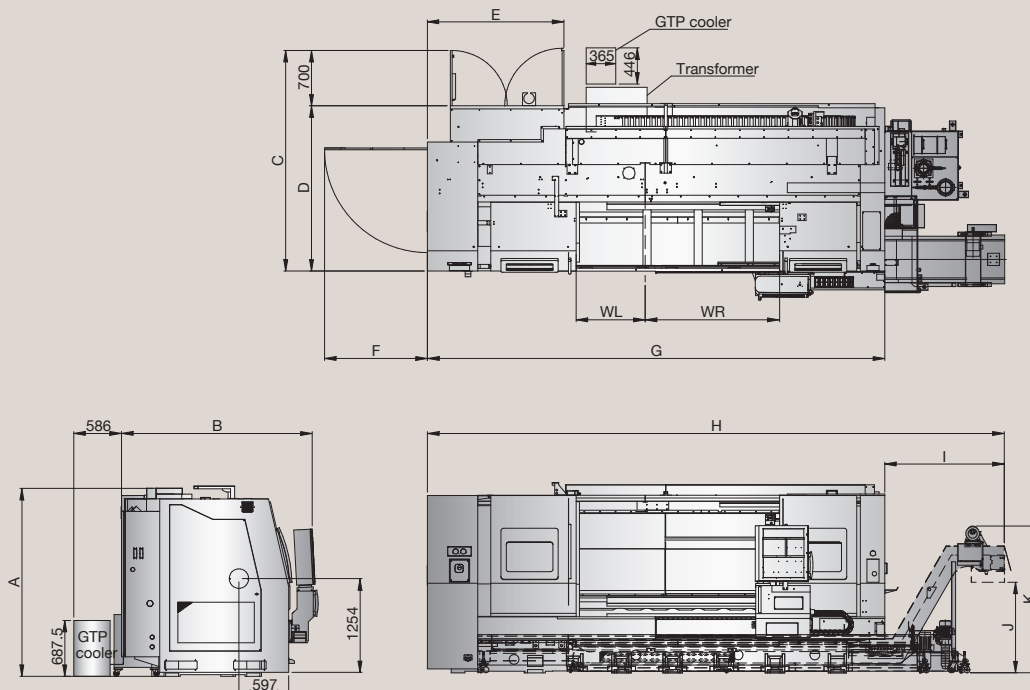


# Machine Layout

## Vturn-40(45)/125 STD, CV, [Y]CM



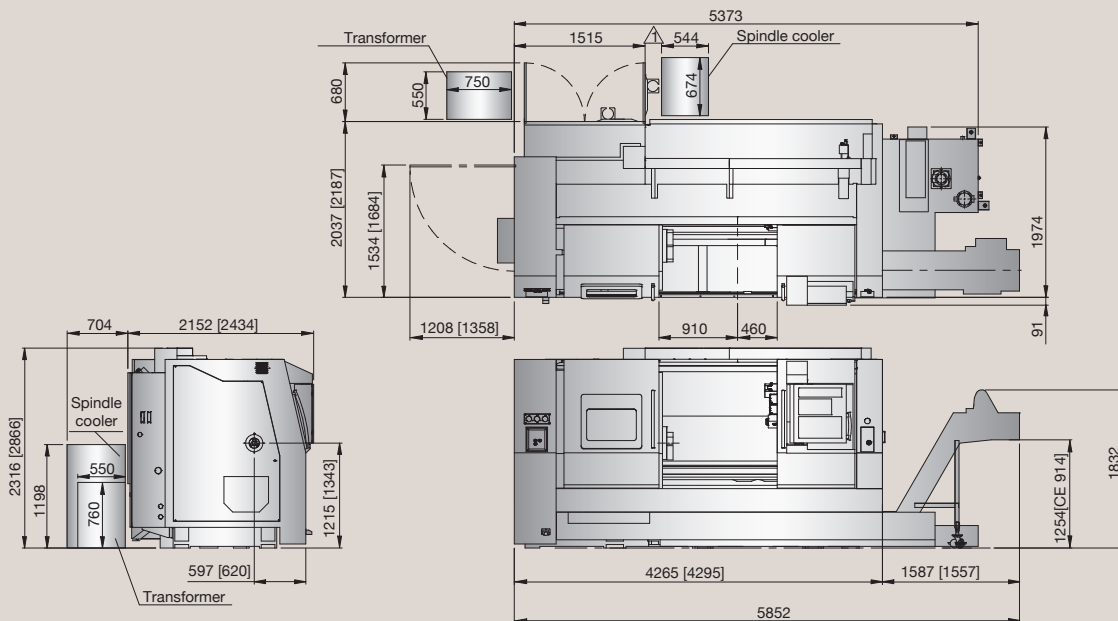
## Vturn-40(45)/220, 325, 425 STD, CV, [Y]CM



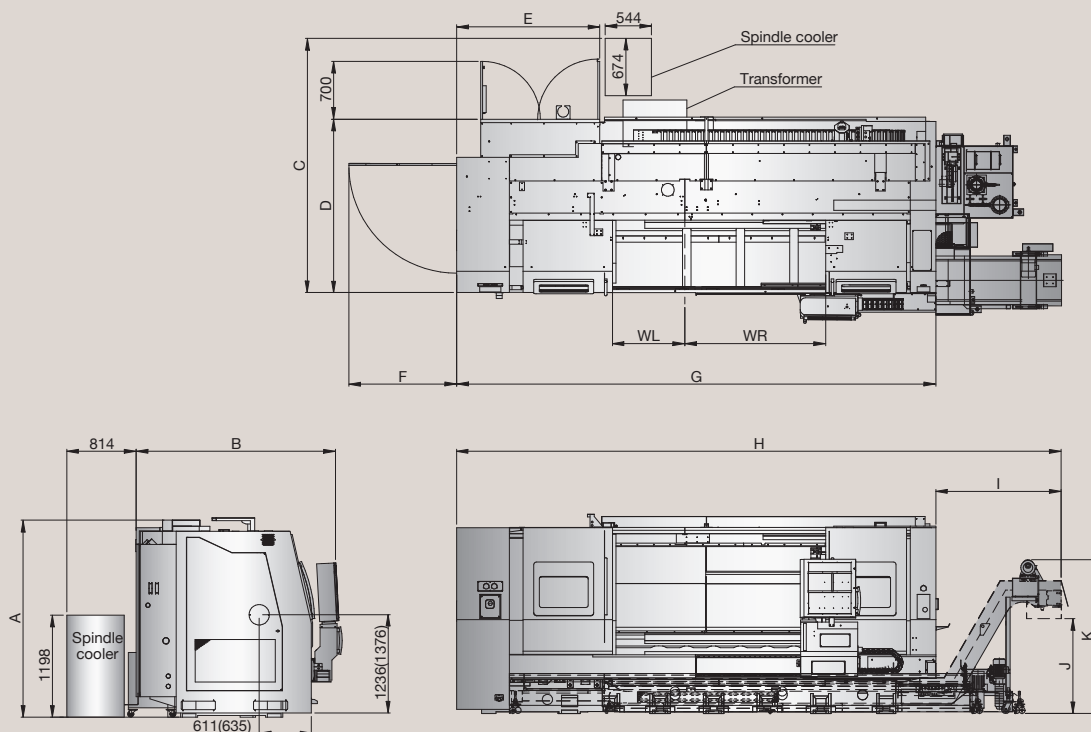
ITEM \ MODEL	A	B	C	D	E	F	G	H	I	J	K	WL	WR
Vturn-45/220 (Y)	2370 (2920)	2385 (2654)	2737 (2997)	2037 (2297)	1679 (1682)	1130 (1330)	5633 (5633)	7110 (7110)	1477 (1477)	1254 (CE 914)	1847 (1847)	850 (850)	1636 (1636)
Vturn-45/325 (Y)	2370 (2920)	2385 (2654)	2737 (3012)	2037 (2312)	1734 (1734)	1244 (1330)	6955 (6955)	8432 (8665)	1477 (1710)	1254 (CE 914)	1175 (1175)	850 (850)	2346 (2346)
Vturn-45/425 (Y)	2370 (2920)	2385 (2654)	2737 (3012)	2037 (2312)	1852 (1852)	1244 (1330)	8273 (8323)	9750 (10033)	1477 (1710)	1254 (CE 914)	1360 (1360)	850 (850)	2945 (2945)

# Machine Layout

## Vturn-40/125 with built-in spindle (CV, [Y]CM)



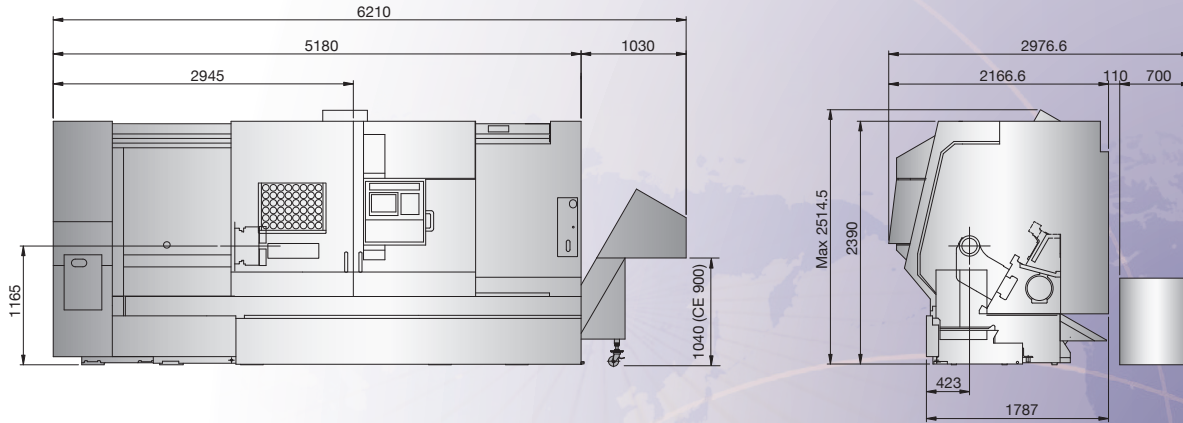
## Vturn-40/220, 325, 425 [Y]CM with built-in spindle



ITEM \ MODEL	A	B	C	D	E	F	G	H	I	J	K	WL	WR
Vturn-40/220 (Y)	2370 (2920)	2385 (2654)	2851 (3111)	2037 (2297)	1679 (1682)	1130 (1330)	5633 (5633)	7110 (7110)	1477 (1477)	1254 (CE 914)	1847 (1847)	850 (850)	1636 (1636)
Vturn-40/325 (Y)	2370 (2920)	2385 (2654)	2851 (3111)	2037 (2312)	1734 (1734)	1244 (1330)	6955 (6955)	8432 (8665)	1477 (1710)	1254 (CE 914)	1807 (2148)	1175 (1175)	2346 (2346)
Vturn-40/425 (Y)	2370 (2920)	2385 (2654)	2851 (3111)	2037 (2312)	1852 (1852)	1244 (1330)	8273 (8323)	9750 (10033)	1477 (1710)	1254 (CE 914)	1807 (2184)	1360 (1360)	2945 (2945)

# Machine Layout (excl. Transformer)

## Vturn-46



Vturn-NP16 with built-in robot




Vturn-A200Y with Y-axis BMT turret



Vturn-V1000 vertical lathe

**VICTOR TAICHUNG** profile:  
 Sales turnover: USD 190 mil's (in 2022)\*  
 No. of employees: 764  
 \*Exchange rate: 1 USD=30 TWD.




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